30 October 2005

Michigan Net, QMN
National Radio Emergency Net
PO Box 457
Allegan, MI. 49010

To: Federal Communications Commission

Re: NPRM WT 05-235

Gentlemen:

On behalf of the *Michigan Net*, "QMN" the nation's oldest Amateur Radio public service network, I would like to offer comments regarding NPRM and Order WT 05-235 on behalf of our membership.

The *Michigan Net* founded in 1935, served as the prototype for many Amateur Radio emergency organizations which have followed. Many of the standard operating procedures promoted by the ARRL for use in emergency and public service communications operations were borrowed from the *Michigan Net.* We continue to provide a wide range of services to many agencies throughout Michigan and have recently developed the *National Radio Emergency Net* which is designed to provide basic emergency communications for rural or isolated areas lacking a local emergency communications organization.

Over the past eight years, QMN has built and/or utilized the following data systems in addition to its radiotelegraph ("CW") network. These modes include:

- VHF Packet Radio data networks
- HF PACTOR data networks
- SSB Voice Networks

As stated in previous comments submitted to the Commission, recent experience during actual missions has proven that CW networks often handle served agency traffic at a ratio of 3.5 to one or better than voice or packet radio (VHF data) networks. For example, during the "Y2K" rollover in 2000, QMN developed the emergency communications contingency plans utilized by the Michigan State Police and Michigan Department of Corrections to link State Police Posts and Prisons throughout the State. Such facilities were required to submit hourly status reports containing various emergency

management data. Such information was submitted via the State Law Enforcement Information Network (data network), Amateur VHF Packet Radio Networks, High Frequency SSB (voice), and High Frequency CW.

During these Y2K activities, MSP maintained careful records regarding the relative efficiency of the Amateur Networks. The results were shocking to many who have little or no familiarity with radiotelegraph net operations. These results can be summarized as follows:

1. The CW Network handled operational message traffic 3.75 times faster, on average, than the voice network.
2. The CW Network handled four times more messages during the operation than the VHF data network.

Over the past ten years, the *Michigan Net* has operated a statewide rain gauge network in support of the National Weather Service. This network utilizes VHF and HF data networks, radiotelegraphy, and voice methods to collect data. The facts show the obvious advantages of radiotelegraphy for public service communications. Typically, during several evenings per year the voice networks are unusable due to poor propagation and interference, yet the CW net continues to function, often clearing rain gauge data reports with little or no difficulty. The CW Net, despite having fewer participants overall, originates more data, more reliably than any other method, whether data or voice.

Many additional examples could be provided. However, we wish to stress the fact that our experience clearly demonstrates the value of CW.

Why Amateur Radio should not be compared to commercial or military practice.

Many radio amateurs cite the fact that maritime and military services no longer use manual telegraphy as justification for eliminating CW examinations. However, they fail to point out that such services now have access to extensive, redundant satellite networks. In reality, such services have migrated away from High Frequency Radio as a primary method and as such, no longer require the level of reliability and survivability offered by CW methods.

Amateur Radio, on the other hand, has access to no such facilities. What satellite facilities that do exist are of limited utility and are accessible for only short periods of time at any one location. As such, they are not a reliable emergency communications tool. Instead, Amateur Radio continues to rely on High Frequency methods for much of its medium and long-haul

communications capability. Such networks are subject to selective fading, solar anomalies, and other disruptions, which may occur simultaneous with a major disaster or terrorist attack.

While the Federal government may not see a strong need for access to decentralized Amateur Radio communications, many local agencies and relief organizations still rely extensively on Amateur Radio. Therefore, it seems wise to maintain some basic, survivable CW capability for use on High Frequency networks.

Why CW is not like other modes.

CW, unlike other modes, requires a basic level of training to utilize. Any attempt to suggest that CW "is just one of many modes" is incomplete and faulty logic. In order to utilize a digital mode, one simply connects components together, becomes familiar with some software commands, and one is on-air. Likewise, with voice communications, one need only know how to talk. However, CW remains a widely used mode within the Amateur Service; a mode which requires training, practice and experience. Whereas a theory test is required to understand the fundamentals of digital methods, likewise, a basic level of testing should be provided to insure that those with access to the High Frequency spectrum have a minimal understanding of CW operations.

CW is a common denominator.

Like SSB, CW is a common denominator. Walk into any Amateur Radio station, and the odds are such that one will find a transceiver quite capable of operating using SSB or CW modes. Millions of transceivers have been manufactured in the past few decades, all of which are capable of CW operation. Data methods, on the other hand are inconsistent. If one were to randomly select and examine a few thousand digital stations assembled by radio amateurs, one would discover that there are few, if any, commonalities. Some would be capable of operating using PSK-31. Others might use MSFK-16. Yet others might use PACTOR I, or PACTOR II, or PACTOR III. Still others might use RTTY or AMTOR methods. Even when two stations happen to use the same protocol, one would quickly discover that the odds of the terminal software and control methods being similar or identical are almost nil. Yet, with CW, one can operate from any station and communicate with nearly any other Amateur Station, provided one has some basic knowledge of the radiotelegraph code.

The Commission is cautioned about "buying in" to the faulty logic, which allows some to suggest that CW is simply another mode. This may be true of

any one digital method, but in reality, CW is an essential, common denominator, which allows any Amateur Station to communicate with another Amateur Station under the worst case conditions.

Basic CW knowledge prevents interference.

CW is still a dominant mode within the Amateur Service, perhaps second in usage behind SSB methods. Therefore, one must ask how operators not trained or examined in CW operations can engage in basic exchanges designed to prevent interference. How does an operator not capable of recognizing a standard signal like "QRL" determine if a frequency is in use?

During Hurricane Rita, a CW net operated by the *National Radio Emergency Network* was disrupted repeatedly by high-power digital operators engaged in a contest. When asked about the interference, many of these digital operators ultimately claimed they were not responsible for disrupting public service communications because they were unable to copy CW. As such, they were unable or unwilling to respect the rights of the pre-existing operation.

When an untrained operator shares spectrum with those using CW, it seems wise to insure that he can at least ask if a frequency is in use and furthermore, have enough knowledge of CW to determine the importance or on-going communications with which he might interfere.

The crossroads.

The Commission stands at an important crossroads. On one hand, many have suggested that eliminating CW is a step toward modernization and more equal access. Yet, Amateur Radio continues to be of value because it is both a survivable and decentralized emergency communications resource. As long as the Amateur Radio Service must rely extensively on High Frequency spectrum for medium and long-haul communications, it seems wise to insure that, under worst-case conditions, an operator can utilize CW.

If the goal of the Commission is to turn Amateur Radio into simply another hobby radio service, such as a "high-class" Family Radio Service or Citizens Band, then continuance of a CW examination requirement is probably unnecessary. However, if this is the case, then we respectfully request that the Commission clearly state this as a justification for eliminating the CW exams.

On the other hand, if one of the goals of the Commission is to insure that Amateur Radio remains a viable emergency communications resource, then it seems wise to insure that some CW training and examination requirements

remain to insure that CW nets remain viable enough to provide the level of survivability and efficiency needed for truly effective disaster communications.

Recommendation:

Recent restructuring has already provided increased access to the Amateur Radio Service. The General Class License provides access to all modes and nearly all frequencies, with the exception of a few small "slivers" of spectrum designed specifically to support CW communications. While the Michigan Net would prefer to retain a 5-wpm minute examination for General Class License privileges, our primary concern is the Extra Class License.

At the very minimum, we recommend retention of the 5-wpm requirement for licensure at the Extra Class level. This level of license is intended to allow an individual to demonstrate the fact that he/she is essentially an "expert" level radio amateur. Considering the high level of continuing usage of CW, it seems wise to require an applicant to demonstrate, at least, a very minimum level of knowledge of CW operations.

The retention of a 5-wpm exam would also provide some exposure to radiotelegraphy and encourage some to utilize it on-air so that they may learn of its extensive advantages for High Frequency communications.

Sincerely,

James Wades, PEM
Executive Director, Michigan Net, QMN
National Radio Emergency Net